

'The future of Euratom' from L'Express (21 May 1964)

Caption: On 21 May 1964, the French weekly magazine L'Express outlines the causes of the slow demise of the European Atomic Energy Community (EAEC or Euratom) and considers what may happen to it in the future.

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The future of Euratom

It looks very bleak, which is a great pity. This is why.

A Community in its death throes, Euratom, a market of ten billion dollars, a French memorandum, these are the essential factors in a politico-economic drama in and of our time. As in the 'Kennedy Round', an overall strategy is combined with a fierce defence of industrial interests. Tricolour neutrons go into battle against American reactors. And, within Europe, national atoms are in dispute with Community atoms.

How may we gain a proper insight into these confused struggles? Let us first quote some figures. The six Member States of the European Community consumed 285 billion KWh in 1960. According to the most reliable forecasts, demand for electricity will increase to 570 billion KWh in 1970 and will rise to more than 1 000 billion KWh in 1980. This means that, in fifteen years, the Six will have construct three times as many power stations as existed five years ago!

The French memorandum

What type of power stations should we go for? Coal-fired? The Community possesses no more than between 5 and 6 % of the world reserves of this fuel, although it already consumes around 10 % of the energy used in the world. In 1960, it imported 27 % of its energy, as opposed to 5 % before the last war. Such imports will exceed 50 % in 1975. 'Nuclear' energy will have to be used as much on grounds of energy independence as on economic grounds.

Between 1970 and 1980, the Community will therefore generate 40 000 megawatts of electricity from nuclear sources. In France, the Fifth Plan provides for the installation each year of a 500-megawatt nuclear power station. That frequency will probably double during the Sixth Plan. For the entire Europe of the Six, investment is estimated at 10 billion dollars or 50 billion francs.

The size of the markets created in this way whets a number of appetites. In the longer term, the companies which have shaken off the competition may hope to enjoy a virtual global monopoly.

For the time being, the reactors which have proved their worth and which are therefore totally reliable, are of two types. The first use enriched uranium as a fuel and have been developed in the United States. Four reactors of this type are being installed in the Europe of the Six, with the help of Euratom. The second type use natural uranium and have been the subject of research at the French *Commissariat à l'Énergie Atomique* (Atomic Energy Commission). The power stations in Chinon belong to that reactor line.

The competition is clearly stiff. It was increased, just a few weeks ago, with a spectacular offer from one of the two giants of the American nuclear industry, General Electric.

It had been thought hitherto that a kilowatt of electricity generated in a nuclear power station was not competitive, that is to say, that it was ultimately more expensive than a kilowatt produced in a conventional power station. The goal of the research currently under way is to lower the cost price. However, General Electric recently offered to supply 'ready-to-use' enriched uranium power stations at prices to beat any competition. The savings made will in some cases be as high as 50 %. Is this, as some say openly, 'bluffing' or dumping prices? Nothing can be certain until an actual contract has been negotiated.

At all events, the threat is serious. An undisputed triumph of American technology would sound the death knell of genuine industrial autonomy for nuclear Europe. Already very reduced in the field of electronics, the Six's room for manoeuvre would thus be considerably diminished. Euratom would have totally failed in its objectives: to set up its own nuclear industry that would be globally competitive.

It is in this context that the French lodged a memorandum two weeks ago. It matters little that Mr Couve de Murville (and, it appears, the Government) were not kept informed of the action taken by the delegates from the *Commissariat à l'Énergie Atomique*. This text follows the consistent thrust of French policy. At a

time when Euratom is trying to secure a loan extension to the order of 200 million francs, i.e. one-tenth of the endowment of its second Five-Year Plan (1963-1967), France is trying to challenge the entire European programme.

The watering-can approach

On what basis? Let us quote, willy-nilly, some criticisms and arguments:

Euratom is supporting America by opting for the enriched uranium reactor line.

It is not bothered about the political and economic consequences of that option.

It is neglecting the natural uranium reactor line.

Its research lacks coherence or is inexcusably late.

Euratom spreads out its efforts and uses a 'watering-can' approach in European countries, and that, given the appropriations committed, harms profitability.

It is badly organised.

The financial sacrifices made by our partners are insufficient.

The genuinely Community-focused aspect is negligible.

It is high time to revise the programmes and the policies. The seriousness of the present situation and the prospect of a merger between the European institutions make this necessary.

Drawn up with skill and flexibility, the French memorandum is none the less brutal in substance. To a large extent, its severity is certainly well founded, and a good proportion of the criticisms hit the nail on the head. The 'rotteness' of Euratom has speeded up considerably in the past few months. However, the present situation is to a large extent determined by French policy. In a nutshell, France is today justifiably criticising a state of affairs which it caused.

It is necessary to go back in time to apportion responsibilities. Euratom did not have a painless birth. The climate created by the failure of the EDC (European Defence Community) was particularly bad. The atom meant the bomb. Powerful groups in the French National Assembly forced the negotiators to allow our country complete freedom to pursue its military programme. Mr Guy Mollet's Government resigned itself thereto. Euratom was deprived of a huge share of the nuclear field.

It was not the only one. As one eminent European said: 'First of all we thought that the negotiations would flounder, then that the Treaty would not be ratified, then that it would not work. The child survived! But we do not make life easy for it.'

In 1957, nuclear Europe was practically reduced to the CEA, the French *Commissariat à l'Énergie Atomique*. Despite its industrial power, Germany had only just recovered, with the signing of the Paris Treaty, the legal capacity to tackle atomic problems. Italy was taking its first steps. Only France counted.

A rival

At that time, the CEA had one fundamental fear: that the new body would eventually overshadow it, that it would have to be integrated into it. One could have imagined, in fact, an immediate 'Europeanisation' of all the nuclear installations in the Europe of the Six. That solution was avoided. Nevertheless, Euratom did not restrict itself to a simple 'coordination' of national programmes. It existed in its own right. This is what caused certain fears to persist. And this is what causes an attitude which will weigh on the development of

Euratom, which is bearing its fruit today.

The CEA 'sulked'. On the basis of its lead, its appropriations and the quality of its research, it delegated to Euratom no more than a small number of research workers or engineers, and only some of these were of an international standard. Afraid of being overshadowed, and having done everything to avoid this, the CEA armed itself in advance against a 'rival'. To top it all, the health of Mr Louis Armand, the first President of Euratom, prevented it from making a good start. Months were lost.

The coming to power of the Gaullists and the stepping up of French military research considerably hardened this basic attitude. But, at that time, everything was still possible. Open cooperation of the CEA would have enabled nuclear Europe to be profoundly inspired by France. The strict nationalism of the Gaullists took up the baton from the profound tendencies of the CEA, or at least of its directors. What is more, at that time Mr Guillaumat transferred from the CEA to the Ministry for the Armed Forces.

The backbone

Nevertheless, Mr Etienne Hirsch, the new President of Euratom, began to tackle the problem. The axis of Euratom, its backbone, would be the 'Joint Research Centre'. He proposed that this Centre be established in Grenoble, where the local university was already remarkably well equipped.

France refused. It did, however, have the opportunity of concentrating most of the work of Euratom on its territory, of specifically avoiding the 'watering-can' effect which it criticises today. That common opportunity for France and for Europe was lost.

It would appear that the fear of seeing the 'Joint Research Centre' become more important was the determining factor. As much on the financial front as on the programmes, France decided to limit its scale.

More. When Mr Mossbauer, a young German physicist and a Nobel Prize winner, proposed the establishment, at the Joint Research Centre, of a department of basic physics, France refused. Turning its back on the European solution, it proposed to the Germans a bilateral agreement costing ten million dollars to finance this work. The agreement was not concluded. Professor Mossbauer returned to work in the United States.

As regards programmes, the attitude was similar. The technical advisers to Mr Hirsch realised that one of the most promising nuclear reactor lines lay in what are known as 'rapid neutron' piles. According to a worker at the Ispra Centre(1) they worked 'like a car where the water in the tank converted itself into petrol as it was driven.' Put simply, at the same time as they were generating energy, they were creating fuel! It goes without saying that, until the day when the research workers have managed to domesticate the H-Bomb, i.e. to master the fusion process, the rapid neutron piles are by far the most promising.

Mr Hirsch then proposed that Euratom would participate with France in the 'Rhapsodie' rapid neutron pile. France refused and declared that it would not under any circumstances become involved in cooperation of this nature. It would quickly change its mind, and for reasons that were less than glorious.

Rapid neutron piles require large quantities of plutonium. 90 kilos for 'Rhapsodie'. France tried to buy this from the United States, because its own plutonium was being used to make bombs. Eight to ten A-bombs can be made from 90 kilos of plutonium. But the United States refused.

It was Euratom which negotiated and secured this purchase and, in this way, 'Rhapsodie' fell partially under the control of Euratom. But, during this time, the Germans quickly launched a similar programme in their Karlsruhe Research Centre. Euratom was persuaded to participate therein and, in this way, to multiply and disperse its efforts. It was, in the same way, the need for plutonium that drove France to accept the recent United States-Euratom agreement on rapid neutron piles. The United States would provide Europe with 350 kg of plutonium, and information about the progress achieved would be exchanged from both sides of the Atlantic.

The French 'fit of the sulks' therefore paralysed Euratom. What was to be done? In line with their political option, the Germans called for an agreement to be signed with the United States so that Europe might familiarise itself with American enriched uranium reactors. Would it not at least be sensible to learn those techniques? Was it not urgent?

So it was done. Despite French opposition, 32 million dollars were devoted to this part of the Euratom programme, and four power stations are being built.

The French refusal precipitated Euratom along a road which today seems dangerous. Mr Hirsch had asked that a French EDF(2) reactor line from Chinon might take part in the same context in joint research. France refused. Why? In fact, the Chinon reactors are primarily designed to produce plutonium for military uses. It is a direct way of getting the EDF to finance the French strike force. But it is not easy to admit.

Atomic power of the nations

To sum up, whether it is a question of Grenoble, of 'Rhapsodie', of Chinon or even of La Hague, and whether it is a question of men or of programmes, French military policy, the mindset of some CEA directors and the French nationalist path provoked varying objections and directed the fate of Euratom. Only the Orgel programme found grace in the eyes of the CEA: it is a matter of a very interesting follow-up to French research into natural uranium piles.

Put another way, France accepts Euratom to the extent that it is not a rival and to the extent that it supplements French programmes and covers the expenditure that work on the strike force makes impossible.

These choices and this policy could not come to any good. The climate was again worsened by two major crises. Under the terms of the Treaty, Euratom has the right of scrutiny over fissile material, with the evident exception of military material. The CEA categorically refused to submit to such scrutiny. That was one way of acknowledging that, in France, all fissile material was set aside for the military. In attempting to apply the Treaty, Mr Hirsch was violently at loggerheads with the French authorities.

A second disagreement took place on another fundamental question: that of voting procedures. Mr Hirsch had secured approval that, for some matters involving Euratom's budget, voting procedures would be subject to majority voting and not require unanimity. France lost its veto. Mr Hirsch was not forgiven for that, and that hastened his departure.

The consequences of opting for 'atomic power of the nations' created serious problems for Euratom operations. Let us say that, in general, each country expected to see expenditure in that country equivalent to the amount that it was paying into Euratom. It was not sufficient that the installations were spread throughout the Europe of the Six, but it was also necessary that all the national companies were awarded orders in proportion to the contribution of each country. This is what was designated as a 'fair return'. This was the cause of absurd orders, increased expenditure and ridiculous calculations.

The heads of service were therefore asked to give detailed accounts of the purchases made in each country! Anti-Europe had been institutionalised and, according to one eminent European, the Commission had been turned into a 'clearing house'.

This was the second misfortune of Euratom, the first being, of course, nuclear 'nationalism'.

While the Common Market has had the advantage of being led, from the outset, by men who believed in the future of their endeavours, Euratom has been directed for two years by Mr Chatenet, previously General de Gaulle's Minister of the Interior, who admits, in private, to being a 'liquidator'.

The principle of a fair return

The German representative to the Commission has resigned and has not been replaced for several months.

Either through incompetence or weakness, the heads of Euratom are passively accepting their downgrading. They have allowed themselves to be imprisoned in impasses. They have bowed the knee before the national governments when they did not do so before certain private interests, of which the governments are the representatives.

The result is the present death struggle. The 'fair return', national pride which prompted each country to have its 'centres', and Euratom's inability to develop its 'own actions' today justify the French memorandum. The men and the work which deserved to be supported, for example at Ispra, may well end up by being washed away in the storm.

The French (Gaullist) Government was determined to destroy Euratom or, failing that, to 'put it to sleep'.

A confidential text attributed to Mr Peyrefitte includes the following: 'Why suppress Euratom when we can, without any argument, box it in so that it is incapable of doing any damage to us? This Community is tending to reduce itself to a simple research body. Accordingly, we may subsequently put it to sleep and then establish a confederal cultural committee ... Let us not seek to strangle it, because we can win hands down.'

This plan has been followed in practice and has succeeded beyond all expectations. But it is, at the same time, the symbol of French failure. Refusal to take the Community path means that the French objectives are out of reach. Now, because of Germany, Europe is open to American techniques, it is impossible to create the unity and shared efforts which would have provided the volume of appropriations and the scale of research which cannot be borne alone. It is now impossible to create a nuclear industry comparable to the American giants and to demolish national undertakings.

Does the French bomb or nationalist pride justify such results?

Is this the way to achieve true equality between Europe and the United States?

The answer has to be no.

Claude Krief

(1) European Atomic Research Centre, northern Italy.

(2) Électricité de France, the French public utility responsible for generating electricity.